CLAIMS

1. An apparatus for securing a sensor to a surgical instrument for use in computer guided orthopaedic surgery, the apparatus comprising:

a sensor support having (i) a support arm configured to support the sensor, and (ii) a stem having (a) a first end secured to the support arm, and (b) a second end expandable from a first position in which the second end of the stem has a first width and a second position in which the second end of the stem has a second, larger width, and

a pin configured to move the second end of the stem from the first position to the second position.

2. The apparatus of claim 1, wherein:

the stem has a passageway extending therethrough,

the passageway defines a first opening at the second end of the stem when the second end of the stem is positioned in the first position, and

the passageway defines a second opening at the second end of the stem when the second end of the stem is positioned in the second position, the second opening being larger than the first opening.

3. The apparatus of claim 2, wherein insertion of the pin into the passageway causes the second end of the stem to be moved from the first position to the second position.

4. The apparatus of claim 3, wherein:

the passageway is defined in an inner sidewall of the stem,

the inner sidewall of the stem is tapered at the second end of the stem,

the pin has a tapered end, and

insertion of the pin into the passageway causes the tapered end of the pin to engage the tapered inner sidewall of the stem to move the second end of the stem from the first position to the second position.

5. The apparatus of claim 2, wherein:

the sensor support arm is a first sensor support arm, and

the sensor support further comprises a second sensor support arm and a third sensor support arm each coupled to the distal end of the cylindrical stem.

6. The apparatus of claim 5, wherein the first, second, and third support arms each include a threaded shaft configured to receive a sensor for computer guided surgery.

7. The apparatus of claim 1, wherein the second end of the stem has a pair of longitudinal slots defined therein.

8. The apparatus of claim 7, wherein each of the pair of longitudinal slots extends from the second end of the stem toward the first end of the stem a distance less than half a length of the stem.

9. The apparatus of claim 1, wherein the stem is substantially cylindrical in shape and has a lobe extending outwardly from the second end thereof.

10. The apparatus of claim 1, wherein the second end of the stem is tear-drop shaped.

11. The apparatus of claim 1, wherein the stem and the support arm are each constructed with a plastic material selected from the group consisting of: acrylic, epoxy, polyester, polypropylene, polyurethane, polyethylene, polycarbonate, polystyrene, polysulfone, polyetherimide, polyethersulfone, polyphenylsulfone, polyphenylsulfide, acrylonitrile-butadiene-styrene polymer, and polyetheretherketone.

12. The apparatus of claim 1, wherein the stem and the support arm are each constructed with polycarbonate plastic.

13. The apparatus of claim 1, wherein the pin is metallic.

14. The apparatus of claim 1, wherein the stem further includes a lip coupled to an inside surface of the stem and formed to project inwardly into the passageway of the stem, and the pin includes a main body and a rim projecting

outwardly from the main body such that the rim of the pin engages the lip of the stem when the pin is positioned within the passageway of the stem.

15. The apparatus of claim 14, wherein the stem further includes a substantially U-shaped cut-out portion formed in an outer wall of the stem and defining a tab of the stem, and wherein the lip is coupled to the tab.

16. The apparatus of claim 1, wherein the pin includes a spring-loaded threaded screw at an end thereof.

17. An apparatus for securing a sensor to a surgical instrument for use in computer guided orthopaedic surgery, the apparatus comprising:

a support arm configured to support the sensor, and

a stem having a first end and a second end, wherein (i) the first end of the stem is secured to the support arm, and (ii) the second end of the stem is expandable between a first position in which the second end of the stem has a first width and a second position in which the second end of the stem has a second, larger width.

18. The apparatus of claim 17, wherein:

the stem has a passageway extending therethrough,

the passageway defines a first opening at the second end of the stem when the second end of the stem is positioned in the first position, and

the passageway defines a second opening at the second end of the stem when the second end of the stem is positioned in the second position, the second opening being larger than the first opening.

19. The apparatus of claim 18, wherein:

the passageway is defined by an inner sidewall of the stem, and

the inner sidewall of the stem is tapered at the second end of the stem.

20. The apparatus of claim 17, wherein the support arm is a first support arm, the apparatus further comprising:

a second support arm secured to the first end of the stem and a third support arm secured to the first end of the stem.

21. The apparatus of claim 20, wherein the first, second, and third support arms each include a threaded shaft configured to receive the sensor for use in computer guided orthopaedic surgery.

22. The apparatus of claim 17, wherein the second end of the stem has a pair of longitudinal slots defined therein.

23. The apparatus of claim 22, wherein each of the pair of longitudinal slots extends from the second end of the stem toward the first end of the stem a distance less than half a length of the stem.

24. The apparatus of claim 17, wherein the stem is substantially cylindrical in shape and has a lobe extending outwardly from the second end thereof.

25. The apparatus of claim 17, wherein the second end of the stem is tear-drop shaped.

26. The apparatus of claim 17, wherein the stem and the support arm are each constructed with a plastic material selected from the group consisting of: acrylic, epoxy, polyester, polypropylene, polyurethane, polyethylene, polycarbonate, polystyrene, polysulfone, polyetherimide, polyethersulfone, polyphenylsulfone, polyphenylsulfide, acrylonitrile-butadiene-styrene polymer, and polyetheretherketone.

27. The apparatus of claim 17, wherein the stem and the support arm are each constructed with polycarbonate plastic.

28. An apparatus for securing a sensor to a surgical instrument for use in computer guided orthopaedic surgery, the apparatus comprising:

a polymeric body having (i) a support arm configured to support a sensor for computer guided surgery, and (ii) a stem secured to the support arm and extending downwardly therefrom.

29. The apparatus of claim 28, wherein the support arm includes a threaded shaft configured to receive the sensor.

30. The apparatus of claim 28, wherein the support arm is a first support arm, and the polymeric body includes a second support arm and a third support arm.

31. The apparatus of claim 28, wherein the stem includes a first end, a second end, and a passageway extending between the first and second ends.

32. The apparatus of claim 31, wherein:

the support arm is secured to the first end, and

the passageway is tapered at the second end.

33. The apparatus of claim 31, wherein the polymeric body is constructed with a plastic material selected from the group consisting of: acrylic, epoxy, polyester, polypropylene, polyurethane, polyethylene, polycarbonate, polystyrene, polysulfone, polyetherimide, polyethersulfone, polyphenylsulfone, polyphenylsulfide, acrylonitrile-butadiene-styrene polymer, and polyetheretherketone.

34. The apparatus of claim 28, wherein the polymeric body is constructed with polycarbonate plastic.

35. A surgical instrument for use in computer guided orthopaedic surgery, the instrument comprising:

a body having a recess configured to receive a sensor support, the recess defined by a first side wall, a second side wall, and a bottom wall, the first side wall and the second side wall being inclined relative to one another.

36. The surgical instrument of claim 35, wherein the recess is further defined by a third side wall and a fourth side wall, the third side wall and the fourth side wall being inclined relative to one another.

37. The surgical instrument of claim 36, wherein:

the first side wall and the second side wall are arranged in a substantially V-shaped configuration, and

the third side wall and the fourth side wall are arranged in a substantially V-shaped configuration.

38. The surgical instrument of claim 35, wherein the recess is substantially diamond shaped.

39. The surgical instrument of claim 35, wherein the recess is tear-drop shaped.

40. The surgical instrument of claim 35, wherein a bore is formed through a portion of the bottom wall.

41. The surgical instrument of claim 40, wherein the bore is a threaded bore.

42. A method for attaching a sensor support carrying a sensor array to a surgical instrument for use in computer guided orthopaedic surgery, the method comprising the steps of

(a) positioning an end of the sensor support into a recess formed in the surgical instrument, and

(b) inserting a pin into a passageway of the sensor support to urge outer walls of the sensor support into contact with a number of side walls of the recess.

43. The method of claim 42, wherein the inserting step includes urging the pin into a tapered end of the passageway.

44. The method of claim 42, wherein the inserting step includes threading a screw tip of the pin into a threaded bore of the surgical instrument.

45. A method of using a computer guided orthopaedic surgical instrument, the method comprising the steps of

(a) removing a first sensor support from a first sterile package,

(b) securing the first sensor support to the surgical instrument with a sterile fastener,

(c) performing a first computer guided orthopaedic surgical procedure,

(d) removing the fastener and the first sensor support from the surgical instrument,

(e) disposing of the first sensor support,

(f) sterilizing the fastener for use in a second computer guided surgical procedure,

(g) removing a second sensor support from a second sterile package

(h) securing the second sensor support to the surgical instrument with the fastener, and

(i) performing a second computer guided orthopaedic surgical procedure.

46. The method of claim 45, wherein the disposing step comprises disposing of the first sensor support without removing a number of sensors therefrom.

47. The method of claim 45, wherein:

the disposing step comprises removing a number of sensors from the sensor support prior to disposal of the sensor support, and

the step of securing the second sensor support to the surgical instrument comprises securing the number of sensors to the second sensor support.

48. The method of claim 47, further comprising the step of sterilizing the number of sensors prior to being secured to the second sensor support.

49. The method of claim 45, wherein:

the step of securing the first sensor support to the surgical instrument comprises inserting a pin into a tapered passageway of the first sensor support.